

Activity and structural changes of mushroom tyrosinase induced by n-alkyl sulfates.

Gheibi N¹, Saboury AA, Haghbeen K, Moosavi-Movahedi AA.

Author information

Abstract

Catecholase activity and structural changes of mushroom tyrosinase (MT) were studied in the presence of some n-alkyl sulfate derivatives. Experiments showed that MT reached its optimal activity in the presence of 1.5, 0.6, and 0.2 mM of sodium n-octyl sulfate (SOS), sodium n-dodecyl sulfate (SDS) and sodium n-tetradecyl sulfate (STS), respectively. Native and incubated MT with the n-alkyl sulfates were also investigated from structural point of view by far-UV circular dichroism (CD) and intrinsic fluorescence spectroscopy. At the above mentioned concentrations of SOS, SDS, and STS no change in the secondary structure of MT was observed. However, changes in the tertiary structure of the enzyme due to the presence of n-alkyl sulfates were obvious. Results of this research indicate that n-alkyl sulfate with longer chain induces greater conformational changes in MT, hence, can activate it at lower concentrations.

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